REMARKS

Favorable reconsideration of this application is requested in view of the above amendments and the following remarks.

Claim 1 has been amended and is supported by the specification at, for example, page 5, lines 9-17. Claims 1-6 have been amended editorially.

Claim Objections

The claims are objected to for the reasons noted in the office action. Claim 1 has been amended editorially. Applicants respectfully request that the objection be withdrawn.

35 USC § 112 Rejections

Claims 1-6 are rejected as being indefinite. The claims have been amended editorially. Withdrawal of the rejection is requested.

35 USC § 103 Rejections

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Utenick (US 4,429,262) in view of Horiuchi (JP 2000206229). Applicants respectfully traverse this rejection.

Claim 1 is directed to an ultrasonic probe having an encoder correction ROM configured to store a previously measured swing scanning angle of the ultrasonic transducer with respect to each of a plurality of count values, wherein the count values are obtained by counting pulses from the rotary encoder over an entire swing range of the ultrasonic transducer, and the encoder correction ROM is configured to output the previously measured and stored swing scanning angle of the ultrasonic transducer. A benefit of this configuration is that it is possible to correct an error of a nonlinear swing angle caused by the angle detection sensor and the mechanical structure.

The rejection relies on Horiuchi for disclosing "outputting previously measured and stored swing scanning angle of the ultrasonic transducer (abstract; 0038)". However, Horiuchi actually teaches that the formula (2), derived from the angles and voltages

previously measured at two reference points, is used to calculate an angle at a point other than the reference points (para. 0038). Therefore, the angle at a point other than the reference points is not the previously measured angle. Similarly, Horiuchi teaches that an error correction is performed on the output voltage value based on the reference point (abstract). Thus, Horiuchi does not disclose outputting the previously measure angle over the entire swing range of the ultrasonic transducer as required in claim 1.

The formula (2) of Horiuchi is a relational expression that is approximated by a linear function using the two reference points and converts the voltage into the swing angle in the entire swing range. In the device of Horiuchi, therefore, the angle at a point other than the reference points is calculated by this relational expression. Thus, if the pulse count value (voltage value) and the swing angle are nonlinear, the actual angle cannot be detected with the configuration of Horiuchi, which is different than the present application.

Thus, the combination of Utenick and Horiuchi does not disclose or suggest the features of claim 1 and the rejection should be withdrawn. Claim 2 is allowable at least by virtue of its dependence on independent claim 1. The rejection of this dependent claim should be withdrawn. Applicants do not concede the correctness of the rejection.

Claims 1-6 are rejected under 35 USC 103(a) as being unpatentable over Yamamoto et al. (GB 2 216 660) in view of Pini (U.S. 5,159,931) and Horiuchi (JP 2000206229). Applicants respectfully traverse the rejection.

Claims 1, 3 and 5 are directed to an ultrasonic probe having an encoder correction ROM configured to store a previously measured swing scanning angle of the ultrasonic transducer with respect to each count value, wherein the count values are obtained by counting pulses from the rotary encoder, and the encoder correction ROM is configured to output the previously measured and stored swing scanning angle of the ultrasonic transducer. A benefit of this configuration is that it is possible to correct an error of a nonlinear swing angle caused by the angle detection sensor and the mechanical structure.

Horiuchi is cited in the rejection for the same reasons as in the rejection above. Horiuchi does not disclose the features of claims 1, 3 and 5 as discussed above for claim

1. Therefore, Horiuchi does not remedy the deficiencies of Yamamoto and Pini and claims 1, 3 and 5 are allowable.

Claims 2, 4 and 6 are allowable at least by virtue of their respective dependence on independent claims 1, 3 and 5. The rejection of these dependent claims should be withdrawn. Applicants do not concede the relevance of the reference to the dependent claims.

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

HAMRE, SCHUMANN, MUELLER & LARSON, P.C.
P.O. Box 2902
Minneapolis, MN 55402-0902
(612) 455-3800

Dated: February 25, 2010

By: _____
Douglas P. Mueller
Reg. No. 30,300
DPM/llf